

What is claimed is:

1. A method for making a mixture of peptides and surface-active agents, comprising:
fermenting a plurality of yeast cells in the presence of a nutrient source to obtain a fermentation product containing peptides,
disrupting the cellular structure of some of the plurality of yeast cells, and
combining the fermentation product obtained from said plurality of yeast cells with a surface-active agent.
2. The method of claim 1, wherein said disrupting the cellular structure of some of the plurality of yeast cells releases intracellular peptides from the yeast cells into the fermentation product.
3. The method of claim 1, further comprising substantially separating the plurality of yeast cells from the fermentation product.
4. The method of claim 3, wherein said separating step takes place prior to said combining step.
5. The method of claim 1, wherein the fermenting is performed under aerobic conditions.

6. The method of claim 1, wherein the plurality of yeast cells comprises *saccharomyces cerevisiae*.
7. The method of claim 1, wherein the plurality of yeast cells comprise one or more of *saccharomyces cerevisiae*, *kluyveromyces marxianus*, *kluyveromyces lactis*, *candida utilis*, *zygosaccharomyces*, *pichia*, or *hansanula*.
8. The method of claim 1, wherein the nutrient source comprises a sugar.
9. The method of claim 8, wherein the nutrient source further comprises one or more of diastatic malt, diammonium phosphate, magnesium sulfate, ammonium sulfate zinc sulfate, and ammonia.
10. The method of claim 1, wherein said disrupting the cellular structure of some of the plurality of yeast cells comprises physically disrupting the cellular structure of some of the plurality of yeast cells.
11. The method of claim 10, wherein said physically disrupting comprises subjecting the yeast cells to one or more of a French Press, a ball mill, or a high-pressure homogenizer.
12. The method of claim 1, wherein said disrupting the cellular structure of some of the plurality of yeast cells comprises chemically disrupting the cellular structure of some of the plurality of yeast cells.

13. The method of claim 12, wherein said chemically disrupting comprises combining said plurality of yeast cells with a surface-active agent.

14. The method of claim 12, wherein said chemically disrupting comprises adding about 2.5% to about 10% of a surfactant to a yeast cell suspension and agitating the mixture at a temperature of about 25° C to about 35° C.

15. The method of claim 12, further comprising physically disrupting a plurality of said yeast cells.

16. The method of claim 1, wherein said surface-active agent comprises a nonionic surfactant.

17. The method of claim 1, wherein said surface-active agent comprises a combination of nonionic and anionic surfactants.

18. The method of claim 17, wherein said surface-active agents comprise ethoxylated linear alcohol and alkyl ether sulfate.

19. The method of claim 1, further comprising heating the plurality of yeast cells after the fermenting step.

20. The method of claim 19, wherein said heating step comprises increasing the temperature of said plurality of yeast cells to between about 40° to about 60° C for about 2 to about 24 hours, followed by cooling to less than 25° C.

21. The method of claim 20, wherein said heating step takes place prior to said disrupting step.

22. The product of the method of claim 1.

23. The product of the method of claim 2.

24. The product of the method of claim 5.

25. The product of the method of claim 10.

26. The product of the method of claim 12.

27. The product of the method of claim 17.

28. The product of the method of claim 20

29. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to

the mixture of fermentation product and surface-active agents produced by the method of claim

1.

30. The method of claim 29, wherein said biological system comprises wastewater.

31. The method of claim 29, wherein said biological system comprises a sewage collection.

32. The method of claim 29, wherein said biological system comprises a cross-flow membrane filtration system.

33. The method of claim 29, wherein said biological system comprises a cooling tower.

34. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of fermentation product and surface-active agents produced by the method of claim

2.

35. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of fermentation product and surface-active agents produced by the method of claim

5.

36. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of fermentation product and surface-active agents produced by the method of claim 10.

37. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of fermentation product and surface-active agents produced by the method of claim 12.

38. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of fermentation product and surface-active agents produced by the method of claim 17.

39. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of fermentation product and surface-active agents produced by the method of claim 20.

40. A method for making a mixture of peptides and surface-active agents, comprising:

admixing a plurality of yeast cells with alcohol at a temperature of at least 40° C to obtain a peptide product,
removing the alcohol, and
combining the peptide product obtained from said plurality of yeast cells with a surface-active agent.

41. The method of claim 40, further comprising separating the plurality of yeast cells from the peptide product.

42. The method of claim 41, wherein said plurality of yeast cells are separated from said peptide product by filtration.

43. The method of claim 42, further comprising treating the peptide product with charcoal after it is separated from the plurality of yeast cells.

44. The method of claim 40, wherein said alcohol is methanol-denatured alcohol.

45. The method of claim 40, wherein said admixing step comprises
admixing a plurality of yeast cells with alcohol at a temperature of at least 60° C under agitation for at least about 2 hours.

46. The method of claim 40, further comprising adding water to said peptide product.

47. The method of claim 40, further comprising refining the peptide product and retaining those peptides having a molecular weight of less than about 30,000 daltons.

48. The method of claim 40, further comprising refining the peptide product and retaining those peptides having a molecular weight of less than about 24,000 daltons.

49. The method of claim 40, further comprising refining the peptide product and retaining those peptides having a molecular weight of less than about 17,000 daltons.

50. The method of claim 40, further comprising refining the peptide product and retaining those peptides having a molecular weight of between about 6,000 daltons and about 17,000 daltons.

51. The method of claim 47, wherein said refining is performed using anion exchange chromatography.

52. The method of claim 51, further comprising refining performed by molecular sieve chromatography.

53. The product of the method of claim 40.

54. The product of the method of claim 45.

55. The product of the method of claim 52.

56. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of peptide product and surface-active agents produced by the method of claim 40.

57. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of peptide product and surface-active agents produced by the method of claim 45.

58. A method for accelerating nutrient uptake in a biological system without a substantially commensurate increase of biomass, comprising exposing said biological system to the mixture of peptide product and surface-active agents produced by the method of claim 52.